



Earthquake

WHAT IT IS

An earthquake is a shaking of the ground that can cause damage to buildings and infrastructure. Following an earthquake, fire is a significant risk due to gas leaks and water pressure failures.

Earthquake strength is described by the Richter Scale, which measures amplitude on a logarithmic basis – meaning that each whole number correlates to a 10-fold increase in earthquake amplitude, or a 30-fold increase in total energy released. Earthquakes below 5 on the Richter scale may be felt but rarely cause damage; earthquakes of 9 and up cause complete regional devastation.

For context, the 2011 Virginia earthquake rated 5.9 on the Richter Scale; the 1995 Northridge, California earthquake 6.7; the 2017 Mexico City earthquake 8.2; the 2011 Fukushima, Japan earthquake 9.1. Virginia is one of 45 states or territories in the US at risk of earthquakes.

WHAT TO DO

Before (Preparedness/Mitigation)

- Sign up for [SpotsyAlert](#) and have a battery or crank powered NOAA weather radio available.
- Locate safe spots in each room under a sturdy table or against an inside wall.
- Hold earthquake drills with your family members.
- Understand how your home or structure will react, and consider hardening if there are areas of concern.
- Learn First Aid.
- Refer to “Power Outage/ Blackout” and “Medical Emergency,” below

During (Response)

- Drop, cover, and hold on. Drop to your hands and knees, if you can, protecting your head and neck.
- Stay away from windows if you are indoors.
- Stay indoors until the shaking stops or if you are sure it is safe.
- If you are outside, find a clear spot away from tall buildings and drop to the ground until the shaking stops.
- If you are in a vehicle, pull over to a clear location and stop.
- Listen to official information.



After (Recovery)

- Expect aftershocks (smaller earthquakes) for hours or days after the initial quake.
- Avoid damaged areas.
- Check your utilities (especially gas), and evacuate and call 911 if you smell gas.
- Look for cracks in your foundation or drywall, as this may be a sign of structural damage. If you find damage, have the structure inspected before reoccupying it.
- Check in with family and friends by texting or using social media.

KEY TERMS

An **Aftershock** is an earthquake of similar or lesser intensity that follows the main earthquake.

The **Epicenter** is the place on the earth's surface directly above the point on the fault where the earthquake rupture began.

A **Fault** is the fracture along which the earth's crust is displaced during an earthquake.

Magnitude is the amount of energy released during an earthquake.



Power Outage/ Blackout

WHAT IT IS

Power outages can be frustrating and troublesome when they last a short while, but they can be dangerous if they last days or longer – especially in very cold or hot weather, or for individuals with specialized medical needs. Outages can also be costly, as all the refrigerated or frozen food in a home is liable to spoil. Outages may occur on their own, but more often they are a secondary effect of tornadoes, hurricanes, thunderstorms, winter storms, extreme heat (from system overload), or even deliberate acts such as an explosive or cyber attack. Some recent large-scale power outages were the result of grid-management software glitches, with no physical damage to components. Depending on the primary hazard, damage unrelated to the outage may slow power restoration primarily due to downed trees or floodwaters blocking access.

WHAT TO DO

Before (Preparedness/ Mitigation)

- Sign up for [SpotsyAlert](#) and have a battery or crank powered radio available.
- Back up all critical files on your computer.
- Consider purchasing a generator for your home – consult an electrician or engineer before purchasing and installing. Safely store an adequate supply of fuel for the generator.
- Unplug electrical equipment. Spikes and surges could occur as power is restored, damaging equipment.
- Fill a bucket or two as a water source and potentially for bathing and flushing the toilet – if municipal water pressure relies on electricity, pressure in the system may fail.
- Maintain a phone with an earpiece that connects by a cord to the receiver (not a wireless phone), and by wire to the wall; retain copper-wire phone service if you have the option (Conventional phone service is not reliant on electrical power). If you switch to VoIP, be sure to purchase a battery backup.
- Charge cellphones and battery-powered devices you use regularly.

During (Response)

- Report your outage. Never assume a neighbor has reported it.
- Use a flashlight only for emergency lighting.
- Never leave a burning candle unattended. Consider using battery-operated flameless candles.
- Unplug electrical equipment until a steady power supply returns.



- Only use generators away from your home and never run a generator inside a home or garage, or connect it to your home's electrical system.
- Remember that your gas appliances will still work, even in a blackout – this includes gas ranges and grills. Do not attempt to use a gas furnace or hot water heater unless you are a licensed professional.
- Keep tabs on food storage/ food safety:
 - Do not open your refrigerator or freezer – they will remain cold longer this way.
 - If it is cold outside, consider putting your food outside to keep it cool.
 - How long your appliances stay cold will depend on their size, how full they are (a fuller cooler will stay cold longer), and how warm the air around them is; a refrigerator will warm up within a few hours; a freezer is typically OK for a full day or longer.
 - Once you decide to open the refrigerator or freezer, plan to eat everything you can as fast as you can – a thawing freezer and a backyard grill can be the foundation of an excellent neighborhood “freezer party.”
- If water pressure fails, a bucket of water dumped manually into a toilet will cause it to flush.

After (Recovery)

- If power is restored, be certain it is steady before you plug equipment into it.
- Eliminate unnecessary travel especially by car as some traffic lights might be out and roads could be congested.
- Throw away any refrigerated food that has been exposed to temperatures 40° F or above for two hours or more, or that has an unusual odor, color, or texture. When in doubt, throw it out!

KEY TERMS

A **Power Outage** is a state of electric power loss in a given area or section of a power grid. It could affect a single meter (house or building), a block, a circuit, or a system, depending on the extent of the damage and the root cause of the outage.

A **Brownout** is indicated by voltage dropping in the system. It is characterized by the lights dimming.

A **Blackout** is the total loss of power in a given area.



Medical Emergency

WHAT IT IS

A medical emergency is any acute injury or illness that poses an immediate risk to a person's life or long-term health. You can't predict accidents or illnesses, but you can prepare for a medical emergency. Medical emergencies may happen on their own, or they may be a secondary impact of virtually every other hazard. Some examples of medical emergencies are: difficulty breathing, fainting, chest pain or pressure, uncontrolled bleeding, coughing or vomiting blood, sudden severe pain, poisoning, or major injuries, such as broken bones, lacerations, burns, or puncture wounds.

WHAT TO DO

Before (Preparedness/ Mitigation)

- Know how to call or text 911.
- Keep well-stocked First Aid kits at home, at work and in your car.
- Put together a list of emergency contacts.
- Keep a list of medical conditions and medications with you at all times.
- Fill out a File of Life and put it on your refrigerator door.
- Learn the warning signs of medical emergencies.
- Participate in trainings such as CPR, First Aid, Basic Life Support (BLS), or Stop the Bleed to prepare yourself for emergencies.

During (Response)

- Stay calm, and call 911. If you are trained, start CPR (cardiopulmonary resuscitation) or rescue breathing, if necessary.
- If you think you are having a medical emergency, seek immediate medical care.
- Gather as much information as possible about the circumstance, and call 911. Follow all the operator's instructions carefully. Stay on the line until the operator says it's OK to hang up.
- If you have only a brief time with the operator, make sure you share your address and your medical issue first.
- Call if you can, text if you can't. It is always preferred that you call 911 since it is a better way of exchanging information.



After (Recovery)

- Review all your documentation to ensure your emergency contact and medical information are up to date.
- Educate others in your networks to better prepare your community.

KEY TERMS

CPR is short for cardiopulmonary resuscitation. CPR is an emergency procedure in which the heart and lungs are made to work by compressing the chest overlying the heart and forcing air into the lungs. It is used to maintain circulation when the heart has stopped pumping on its own. CPR courses are offered by many community organizations.

First Aid refers to a course of basic injury-treatment and life-saving skills offered by many community organizations.

An **Automated External Defibrillator (AED)** is a portable device that checks the heart rhythm and can send an electric shock to the heart to try to restore a normal rhythm.

File of Life is a form that you keep on your refrigerator door that provides emergency personnel critical medical and emergency contact information in case you are unable to provide that information to them yourself.